

A new species of the genus *Perigona* CASTELNAU s. str. from southern Africa

(Insecta, Coleoptera, Carabidae, Perigoninae)

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Abstract

Perigona (s. str.) *wachteli* sp. n. is described from Zambia, southern Africa, and compared with the other known African species of the subgenus *Perigona* CASTELNAU s. str.

Introduction

By courtesy of Mr. Franz WACHTEL, Öhnböck, I received a sample of ground beetles that were collected recently in Zambia, Zimbabwe and northeastern RSA. It includes *inter alia* a small series of perigonine beetles that do not fit any of the species of the subgenus *Perigona* CASTELNAU s. str. known from Africa and Madagascar, and therefore is herein described as a new species.

Perigoninae (or -ini) is a moderately diverse subfamily (or tribe) of ground beetles that is distributed throughout the world, but is most common and diverse in the tropics. Almost all perigonines are small animals of characteristic shape that mainly live under debris, fallen leaves, droppings of birds, but also in the ground, in caves, or even in food storage. Species of this subfamily are easily identified by the deeply impressed marginal sulcus of the elytra that widens behind to become a distinct channel, and that is occupied by a definite number of pores and elongate marginal setae the arrangement of which is of high taxonomic importance.

The supraspecific classification of Perigonini is somewhat controversial, in particular the subdivision of the main genus *Perigona* CASTELNAU. Whereas certain authors of the French tradition (e.g. BASILEWSKY 1989) tend to raise the many subgenera to generic status, other authors (e.g. LORENZ 1998) still believe that most Perigoninae belong to a single genus *Perigona* and thus, keep on the subgenera. It is my opinion that the latter classification matches better the close relationships within this genus.

According to the rather recent revision of the African species of Perigoninae BASILEWSKY (1989) the subgenus *Perigona* s. str. includes four species from the African mainland, and JEANNEL (1948) enumerated another four species from Madagascar which probably are endemic to that island. The new species to be described herein does not match any of the known species, although in shape it is most similar to *P. parallela* CHAUDOIR, and in pattern to *P. mediornata* BASILEWSKY. The first species, however, lacks any elytral pattern, whereas the latter species is considerably larger and has a slightly different elytral pattern.

Material and methods

The holotype of the new species was kindly presented to Zoologische Staatssammlung München (ZSM), the paratypes are shared with ZSM and the working collection of author in ZSM (CBM).

For the taxonomic treatment standard methods are used. The male genitalia were removed from specimens soaked for a night in a jar under wet atmosphere, then cleaned for a short while in hot KOH. Measurements were taken using a stereo microscope with an ocular micrometer. Length has been measured from apex of labrum to apex of elytra. Lengths, therefore, may slightly differ from those of other

authors. Length of pronotum was measured from the most advanced part of base to the most advanced part of apex.

The habitus photograph was obtained with a digital camera using SPOT Advanced for Windows 3.5 and subsequently was worked with Corel Photo Paint 10.

Perigona (s. str.) *wachteli* sp. n.

Figs 1-3

Types. Holotype: ♂, Zambia, Ikengele, Nchila Res. 6.11.2002, leg. F. WACHTEL (ZSM). – **Paratypes:** 2♂♂, 3♀♀, same data (CBM, ZSM).

Diagnosis: By virtue of the arrangement of the three lateral marginal elytral pores in a straight line and by presence of distinct clypeo-orbital sulci the new species belongs to the subgenus *Perigona* s. str. *Perigona wachteli* is distinguished from the other African species of this subgenus by shape and structure of the male aedeagus which bears a large and at upper margin conspicuously dentate sclerite at the left side of the internal sac; and by the characteristic elytral pattern forming a narrow sutural stripe; from the most similar patterned *P. mediornata* Basilewsky it is further distinguished by lesser size and the equal width of the sutural stripe.

Description

Measurements: Length: 3.6-3.8 mm; width: 1.25-1.35 mm; Ratios. Width/length of prothorax: 1.16-1.19; width prothorax/head: 1.26-1.32; length/width of elytra: 1.64-1.70.

Colour (Fig. 3): Black to dark piceous, head usually slightly darker than posterior body. Clypeus, labrum, mouth parts, antennae, and legs reddish. Elytra with narrow, rather ill delimited light reddish sutural stripe that occupies the sutural and sometimes also the second interval. In some specimens apex of elytra in middle rather ill-delimited brownish. Pronotum barely lighter in middle, but in holotype with rather extended, ill delimited lighter centre. Lower surface blackish to piceous, becoming slightly lighter towards apex of abdomen.

Head: Of average size. Eyes large, laterally moderately protruding. Labrum at apex slightly excised. Clypeal-frontal furrows distinct, oblique, attaining anterior supraorbital seta. Antenna short, barely attaining base of prothorax, median antennomeres globulose. Surface impunctate, microreticulation distinct though superficial, isodiametric, surface rather glossy.

Pronotum: Rather narrow, little wider than long, little wider than head, barely cordiform, widest at apical third. Lateral border near apex slightly convex, in posterior two thirds gently oblique and almost straight, prebasal sinuosity if present, very faint. Apex gently excised, apical angles slightly protruding, obtuse. Base almost straight, only laterally slightly curved, basal angles almost rectangular but obtuse. Apex and base barely margined in middle, distinctly margined laterally, like lateral borders. Median line distinct, not reaching apex nor base, both anterior and posterior transverse sulci very inconspicuous. Anterior marginal seta situated close to apex, in front of widest diameter, posterior marginal seta situated at basal angle. Apex inside of apical angle with some short setae. Surface with extremely fine punctuation, with superficial microreticulation consisting of irregularly transverse meshes and lines, in some specimens with certain shallow transverse wrinkles in basal half. Surface rather glossy.

Elytra: Narrow and elongate, laterally little rounded, dorsally moderately convex, but depressed on disk, widest at or slightly behind middle. Humeri rounded, apex elongate, evenly convex. Median marginal punctures arranged in a straight line. Marginal channel towards apex widened, depressed, sparsely pilose. Striae barely recognizable, only inner three striae very lightly marked by rows of fine, inconspicuous punctures. Intervals absolutely depressed. 3rd interval with 3 inconspicuous setiferous punctures, anterior puncture situated at 3rd stria and at basal quarter, both posterior punctures situated at 2nd stria, median puncture slightly behind middle, apical puncture just above basal border. Surface with sparse and very fine punctuation and with extremely superficial microreticulation consisting of narrow transverse lines. Surface glossy.

Lower surface: Metepisternum elongate, almost 3 x as long as wide. Terminal abdominal sternite in both sexes with fringe of short hairs.

♂ genitalia (Fig. 1): Genital ring rather asymmetric, with wide, obliquely rounded apex, rather parallel, base evenly rounded. Aedeagus short and stout, ventral margin straight, apex short, obtuse. Internal sac

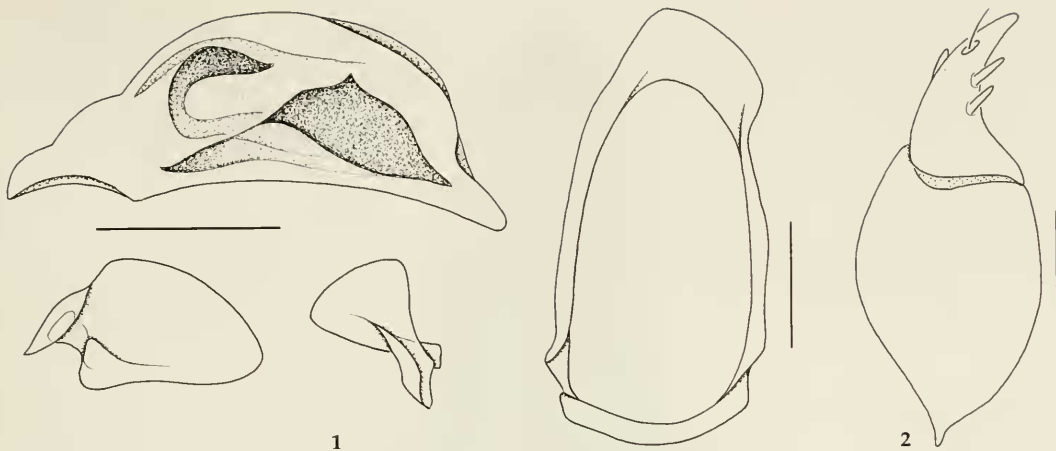


Fig. 1. *Perigona wachteli* sp. n. Male genitalia: Aedeagus, parameres, and genital ring. Scales: 0.25 mm.

Fig. 2. *Perigona wachteli* sp. n. Female genitalia: stylomeres 1 and 2. Scale: 0.1 mm.

with a large, oval-shaped sclerite on the left side near apex that is characteristically dentate on its upper margin, and with a second, smaller sclerite of complex shape at the roof behind. Parameres of rather similar shape, triangular-convex at apex, though left paramere larger and more elongate.

♀ genitalia (Fig. 2): Of ordinary shape. Stylomere 1 devoid of setae on apical margin. Stylomere 2 with two medium sized ensiform ventro-lateral setae, one quite large ensiform dorso-median seta located about in middle of stylomere, and a single nematiform seta originating from a groove in apical third of stylomere.

Variation: Apart from slight differences in colour pattern of pronotum which may bear a more or less distinct and extended reddish centre, very little variation noted.

Distribution: Zambia, southern Africa. Known only from type locality.

Collecting circumstances: Not recorded, but probably collected at light. It was captured together with *Perigona (Trechicus) hirtella* BASILEWSKY.

Etymology: Named in honour of the collector, Mr. Franz WACHTEL.

Relationships

Certainly *Perigona wachteli* sp. n. is next related to both, *P. parallela* CHAUDOIR and *P. pallida* CASTELNAU, with which it shares the elongate, almost parallel body shape. Probably *P. wachteli* is even more closely related to *P. parallela* which is rather similar in size and shape of body and male aedeagus, though differs in its uniformly light colouration of pronotum and elytra, and in the shape of the sclerotized plates in the internal sac of the aedeagus. In spite of its rather similar elytral pattern, *P. mediornata* BASILEWSKY probably is not very closely related to *P. wachteli* which is demonstrated by the quite dissimilar aedeagi of both species.

Comments

Perigona wachteli sp. n. is the first species of the subgenus *Perigona* s. str. to occur exclusively in southern Africa, whereas the other species mainly occur in West and Central Africa. Only the most common and most widespread species *P. parallela* CHAUDOIR has been recorded from as south as northern Mozambique. Since no collecting circumstances are known, nothing can be said about the way of life of the new species, although most probably it may live under debris and litter like most other species of the genus *Perigona*.



Fig. 3. *Perigona wachteli* sp. n. Habitus. Length of whole insect: 3.4 mm.

Recognition

For identification, a new key is provided that is modified from the most recent key to the African species of the nominate subgenus *Perigona* CASTELNAU s. str. by BASILEWSKY (1989).

1. Elytra narrow and elongate, $>1.4\times$ as long as wide, subparallel; pronotum narrow, not cordiform, widest diameter less close to apex; eyes large and prominent; macropterous, with elongate metepisternum (c. $3\times$ as long as wide), aedeagus with shorter apex 2.
 - Elytra wide and short, $<1.3\times$ as long as wide, laterally convex; pronotum fairly wide, subcordiform, widest diameter close to apex; eyes smaller and little prominent; brachypterous, with short metepisternum (c. $1.5\times$ as long as wide); aedeagus with elongate apex. Central Africa *nigrociliata* BASILEWSKY
2. Smaller species, length <3.8 mm; elytra either uniformly dark yellowish to light brown, or black with narrow reddish sutural stripe; terminal abdominal sternite in both sexes with fringe of short hairs; aedeagus short and stout, with rather thin apex of variable length (Fig. 1) 3.
 - Larger species, length >4.6 mm; elytra black with light sutural stripe that is enlarged behind middle to a wide spot; terminal abdominal sternite only in female with fringe of short hairs; aedeagus elongate and more depressed, with short, thick apex. Eastern Central Africa *mediornata* BASILEWSKY
3. Elytra black with narrow reddish sutural stripe; pronotum black, sometimes with indistinct dark reddish discal spot; anterior sclerite in internal sac large, characteristically dentate at upper margin (Fig. 1). Zambia, southern Africa *wachteli* sp. n.
 - Elytra and pronotum uniformly dark yellowish to light brown; anterior sclerite in internal sac of aedeagus differing in shape from that of *P. wachteli*. 4.

4. Larger species, length >3.25 mm; pronotum wider, with narrower base, lateral margin gently sinuate near base, anterior angles slightly produced; aedeagus with very short apex. Tropical Africa from Senegal to Mozambique *parallela* CHAUDOIR
- Smaller species, length <2.7 mm; pronotum narrower, little narrowed towards base, lateral margin not sinuate near base, anterior angles not produced; aedeagus with fairly elongate apex. West Africa
..... *pallida* CASTELNAU

Acknowledgements

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References

- BASILEWSKY, P. 1989. Révision des Perigonini d'Afrique (Coleoptera Carabidae). – J. Afr. Zool. **103**, 413-452.
- JEANNEL, R. 1948. Coléoptères Carabiques de la région Malgache (2ème partie). – Faune de l'Empire français **10**, 371-765.
- LORENZ, W. 1998. Systematic list of extant ground beetles of the world (Insecta Coleoptera "Geodephaga": Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). – Tutzing, printed by the author. 502 pp.

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